

# JAMDO

SOEN 487 Project  
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"We're going to make it happen. As God is my bloody witness, I'm hell-bent on making it work."



- Elon Musk (2008 Wired.com)

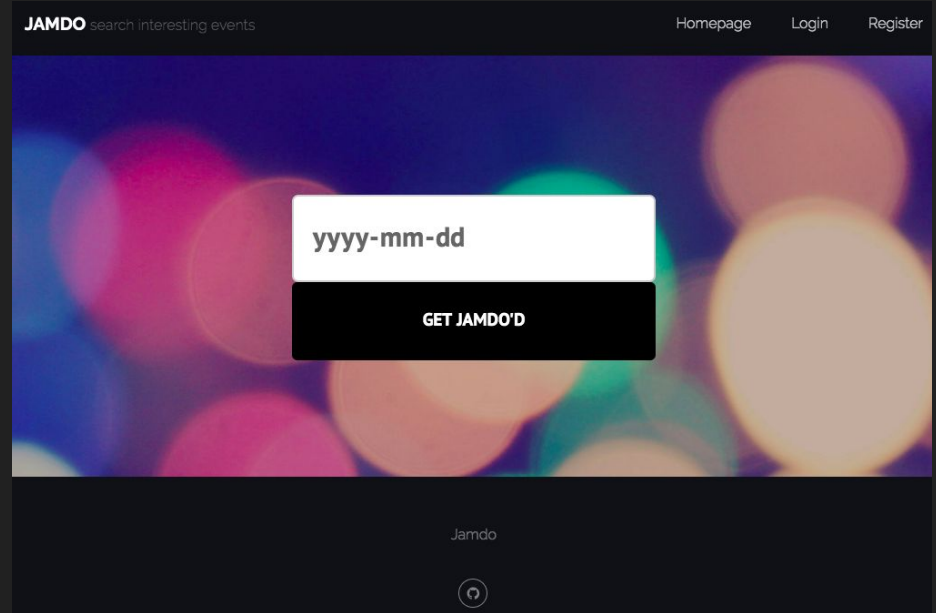
# JAMDO - Search Interesting Events

*What were some notable births on a given year?*

*Who died 1976-04-26?*

*What were the newspaper headlines like 1999-12-31?*

Jamdo is your all-in-one place for these three specific types of information.



# Application Features

- Use of external 3rd Party Apis
- Cross Server RESTful API
- User and Server Authentication with JWT
- Encryption with BCrypt
- Implementation of caching system
- Asynchronous requests
- Decorators
- Infinite Fun

## 4 Application Servers

- Authentication
- Resource Gathering
- Caching
- Application

# BETA Test!

- Beta version deployed on Heroku - (PaaS)
- 3 servers communicating online

## Missing Functionality

- User logins
- Caching
- Data processing/formatting

### Application URL

[jamdo-487.herokuapp.com](http://jamdo-487.herokuapp.com)

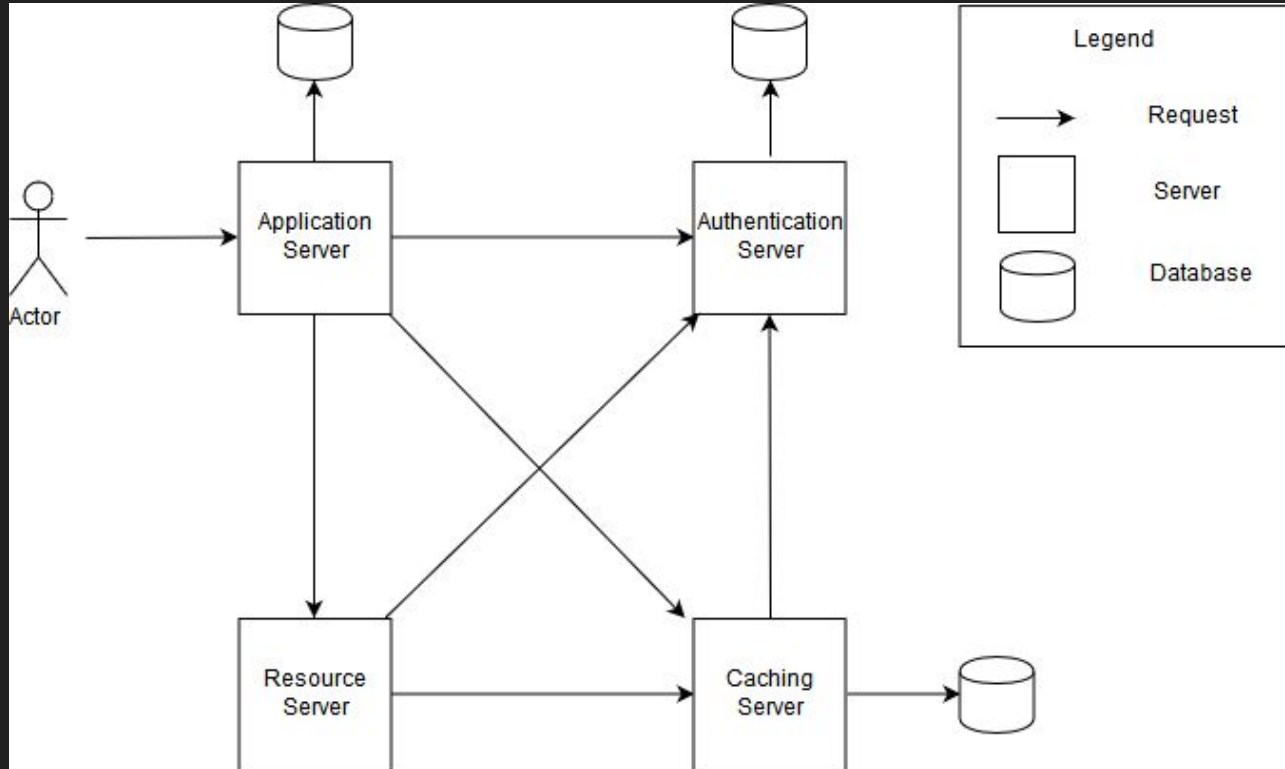
### Authentication URL

[authentication-server-487.herokuapp.com](http://authentication-server-487.herokuapp.com)

### Resource URL

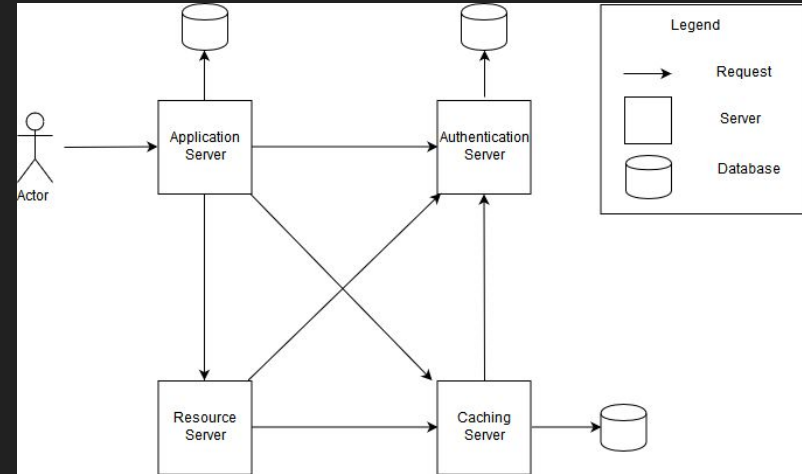
[resource-server-487.herokuapp.com](http://resource-server-487.herokuapp.com)

# Microservice Map



# Trace of Client Querying Date - 1989/01/23

- I. *Front-end request of 1989/01/23*
- II. *Application server query of Caching Server for 1989/01/23*
- III. *Cache Server requests authentication of Application Server*
- IV. *Authentication Server verifies Application Server*
- V. *Cache Server queries local database for date 1989/01/23*
- VI. *Cache Server response of query (assume cache miss) to Application Server*
- VII. *Application Server request for 1989/01/23 from Resource Server*
- VIII. *Resource Server requests authentication of Application Server*
- IX. *Authentication Server verifies Resource Server*
- X. *Gathering/Processing of data from 3rd party APIs*
- XI. *Resource Server POST request of newly processed data to Cache Server*
- XII. *Cache Server requests authentication of Resource Server*
- XIII. *Authentication Server verifies Resource Server*
- XIV. *Resource Server response of processed JSON data to Application Server*
- XV. *Processing of response JSON to application view template*
- XVI. *HTML Response to Client*



# Application Server

- Client interface
- User login and save search
- Query information based on year, month, day
- Returns list of interesting Births, Deaths, and Events
- Infinite scroll continuously returns results from cached database

## API Endpoints

GET /<int:year>/<int:month>/<day>

## Database Model

USERS	
id	int
fname	varchar(255)
lname	varchar(255)
username	varchar(255)
password	varchar(255)



# Resource Server

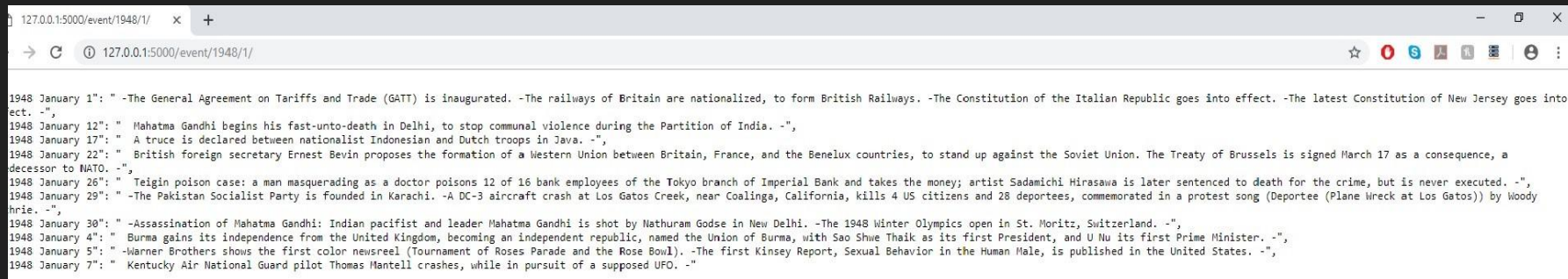
- Queries Wikipedia API
- Finds pertinent wiki page based on Year
- Parses the wiki page based on Month and Day
- Searches multiple event types (historical events, births, deaths)
- Searches date range 1900 - 2018

## API Endpoints

GET /<string:event\_type>/<int:year>/<int:month>/<day>

GET /<string:event\_type>/<int:year>/<int:month>/

GET /<string:event\_type>/<int:year>/



# Caching Server

- Uses a database to store and retrieve data
- Stores newly searched data
- Returns previously searched data to Application Server

## API Endpoints

GET & POST `/isCached/<string:event_type>/<int:year>/<int:month>/<day>`

GET & POST `/isCached/<string:event_type>/<int:year>/<int:month>/`

GET & POST `/isCached/<string:event_type>/<int:year>/`

## Database Model:

result	
id	integer
year	integer
month	integer
day	integer
type	text
event	text

	id	year	month	day	type	event
1	1	1989	1	23	event	"24 Armed civilian leftists briefly attack and occup
2	2	1995	4	19	event	" Oklahoma City bombing: 168 people, including 8 Fed
3	3	1999	<null>	<null>	death	{"1999 April 10": " Jean Vander Pyl, American televi
4	4	1999	<null>	<null>	birth	{"1999 April 1": " . Jairus Aquino, Filipino actor -
5	5	1999	<null>	<null>	event	{"1999 April 1": " . Nunavut, an Inuit homeland, is

# Authentication Server

- Only registered trusted servers
- Authenticates identity of servers
- Generates JWT token
  - Applied secret salt
  - Utilizes servername/password in hash
- Serves/Expects tokens as cookie

## API Endpoints

GET /getToken

POST /authenticate

```
[
  {
    "id":1,
    "name":"application",
    "password":"APPLICATION_SERVER_PASSWORD",
    "token":"b'R3a2UkDSG8=yc%hSxg7U#AL+Un?@sg3_us%Jm+TKhZ4Pqt_KP^WmDnPaCBKL.R3a2UkDSG8=yc%Jm+TKhZ4Pqt_KP^WmDnPaCBKL'"
  },
  {
    "id":2,
    "name":"resource",
    "password":"RESOURCE_SERVER_PASSWORD",
    "token":"b'%U+WbPc3Et#a*sCTb^CWdsK%mf+%w&RXr8aS8h-pxjZz$*FnsGe4Vx^MnN_R.%U+WbPc3Et#a*sCTb^CWdsK%FnsGe4Vx^MnN_R.iJQ-5uzPDe_hKVRGAuO_k'"
  },
  {
    "id":3,
    "name":"caching",
    "password":"CACHE_SERVER_PASSWORD",
    "token":"b'eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJleHAiOjE1ODY4OTM5OTIsImhhdCI6MTU1NTM1NzMsImwicz3ViJjoicmVzb3VyY2UiOiJQ-5Xe2pfDbgxZztV5c_wF2eqauzPDe_hKVR'"
  }
]
```

# Wikipedia Results

## Events

January 1, 2001 (Monday)

[edit](#) [history](#) [watch](#)

- [Israeli–Palestinian conflict](#): A Hamas suicide car bomber detonates in the city of Netanya, wounding 50. ([Jewish Virtual Library](#))<sup>[ⓘ]</sup>
- *[Elmo's World](#)* starts of with the third season with the premiere episode "Computers," which is the first episode where Elmo receives a video email.
- [A black monolith](#) measuring approximately nine feet tall appears in [Seattle's](#) Magnuson Park, placed by "Some People", a group of anonymous artists; the monolith is in reference to the movie *[2001: A Space Odyssey](#)*.
- Greece adopts the [euro](#) as its currency. ([The Guardian](#))<sup>[ⓘ]</sup>
- This date was formally defined as the start of the [21st century](#) and [3rd millennium](#), but such usage is [disputed](#).

## Deaths

January 2001  [\[ edit \]](#)

**1**  [\[ edit \]](#)

- [Sir Michael Hanley](#), 82, British intelligence officer, Director-General of MI5.<sup>[1]</sup>
- [Constantin Rădulescu](#), 76, Romanian doctor, footballer and manager.
- [Ray Walston](#), 86, American actor.<sup>[2]</sup>

# JAMDO Results

JAMDO search interesting events

Homepage

Login

Register

## Births

[1989 January 1:] -Adele Haenel, French actress -Edita Vilkeviciūtė, Lithuanian model -; [1989 January 10:] -Conor Dwyer, American Olympic swimmer -Emily Meade, American actress -Heo Sol-ji, South Korean singer -; [1989 January 11:] -Chris Perry-Metcalf, British actor -Naif Hazazi, Saudi footballer -; [1989 January 12:] -Ard Muñoz, Filipina actress and model -; [1989 January 13:] -Beau Mirchoff, American-Canadian actress -; [1989 January 15:] -Alexei Cherepanov, Russian ice hockey player (d. 2008) -Ryan Corr, Australian actor -Keiffer Hubbell, American ice dancer -Tasha Reign, American pornographic actress, nude model, stripper, producer, and sex columnist -Ronny Vencatachellum, Mauritian swimmer -; [1989 January 16:] -Yvonne Zima, American actress -; [1989 January 19:] -Yani Tseng, Taiwanese golfer -Kelly Marie Tran, American actress -; [1989 January 21:] -Kaitlin Howell, Canadian actress -; [1989 January 20:] -Kim Bui, German artistic gymnast -Nadia Di Cello, Argentine actress -; [1989 January 21:] -Murilo de Almeida, Brazilian-East Timorese footballer -Katie Griffiths, British actress -Doğuş Balbay, American basketball player -Sergey Fesikov, Russian swimmer -Henrikh Mkhitaryan, Armenian footballer -; [1989 January 24:] -Calvin Goldspink, British actor -Gong Lijiao, Chinese shot putter -; [1989 January 25:] -Mikako Tabe, Japanese actress -; [1989 January 26:] -Hannah Arterton, English actress -Emily Hughes, American figure skater -; [1989 January 27:] -Daisy Lowe, British fashion model -Ricky van Wolfswinkel, Dutch footballer -; [1989 January 28:] -Bruno Massot, French-born German pair skater -; [1989 January 31:] -Alex D. Linz, American actor -Anyia Kop, American fashion model -Kōhei Uchimura, Japanese gymnast -; [1989 January 4:] -Kariem Hussein, Swiss -; [1989 January 6:] -Andy Carroll, English footballer -James Durbin, American singer -Nicky Romero, Dutch DJ -; [1989 January 7:] -Emiliano Insua, Argentine footballer -Khairul Fahmi Che Mat, Malaysian footballer -; [1989 January 8:] -Steven Christopher Parker, American actor -; [1989 January 9:] -Michael Beasley, American basketball player -Nina Dobrev, Bulgarian-born Canadian actress -]

## Deaths

[1989 January 10:] -Hai Deng, Chinese abbot of Shaolin Temple (b. 1902) -Herbert Morrison, American radio reporter (b.

- Results can be based on any parameters of Year, Month, Day
- Returns 3 types of events
  - Notable Births
  - Notable Deaths
  - Notable Events
- Infinite scroll of cached events

# Challenges

It's not a bug, it's a feature

- Microservice Stability and Integration
- How to Authenticate servers
- How to prove server identity
- Data structure passed between servers
- Database Model based on date/event information
- Deployment is annoying
- How to inject more fun into application
- Complex routing behaviours between microservices
- Convolved 3rd party APIs

# Improvements

JAMDO has been in beta  
for *3 months* now

- More types of resources to gather, more 3rd party APIs
- Customized user content based on searches
- Restful JAMDO API
- API key generator for use of JAMDO microservices
- VR integration
- Battle Royale style multiplayer
- Cryptocurrency integration
- Machine Learning/AI

# Questions?





Get JAMDO'd

# Thanks!

**Contact us!**

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**We're Hiring!:**

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